

Docket Number: 081468-0306525
Client Reference: P-1586.010-US

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re the Application of
Joeri LOF et al.
Application No.: 10/705,816

Group Art Unit:

Examiner: Unassigned

Filed: November 12, 2003

Confirmation No.: Unassigned

For: Lithographic Apparatus and Device Manufacturing Method

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

Pursuant to 37 C.F.R. 1.56, the attention of the Patent and Trademark Office is hereby directed to the following U.S. patent application(s):

| Examiner's Initials | First Inventor | Application No. | Filing Date | Enclosed |
|---------------------|--------------------------------|-----------------|-------------|--|
| TL | Joeri LOF et al. | 10/705,805 | 11/12/2003 | <input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card |
| TL | Joeri LOF et al. | 10/705,783 | 11/12/2003 | <input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card |
| TL | Helmar VAN SANTEN et al. | 10/743,271 | 12/23/2003 | <input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card |
| TL | Johannes C.H. MULKENS et al. | 10/743,266 | 12/23/2003 | <input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card |
| TL | Antonius T.A.M. DERKSEN et al. | 10/705,785 | 11/12/2003 | <input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card |
| TL | Klaus SIMON et al. | 10/724,402 | 12/01/2003 | <input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card |
| TL | Arno J. BLEEKER | 10/715,116 | 11/18/2003 | <input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card |
| TL | Bob STREEFKERK et al. | 10/719,683 | 11/24/2003 | <input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card |
| TL | Joannes T. DeSMIT et al. | 10/705,804 | 11/12/2003 | <input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card |

*The Examiner's initials adjacent a citation indicates he/she has considered the cited application relative to the subject application.



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|-------------------|---------|---------------|
| Atty. Dkt. No. | M# | Client Ref. |
| 081468 | 0306525 | P-1586.010-US |

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Applicant: Joeri LOF et al.

Appln. No.: 10/705,816

Filing Date: November 12, 2003

Examiner: ~~Unassigned~~ Tony Li Group Art Unit: ~~Unassigned~~ 2828

Date: February 20, 2004 Page 1 of 1

U.S. PATENT DOCUMENTS

| Examiner's Initials* | Document Number | Date MM/YYYY | Name (Family Name of First Inventor) | Class | Sub Class | Filing Date (if appropriate) |
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| TL | AR 2004/0000627A1 | 01/01/2004 | Karl-Heinz SCHUSTER | | | |
| TL | BR 6,600,547 | 07/29/2003 | WATSON et al. | | | |
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| | HR | | | | | |
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| | LR | | | | | |
| | MR | | | | | |
| | NR | | | | | |

FOREIGN PATENT DOCUMENTS

| | Document Number | Date MM/YYYY | Country | Inventor Name | English Abstract | | Translation Readily Available | |
|--|--------------------|-----------------|---------|---------------|---------------------|----|-------------------------------------|----|
| | | | | | Enclosed | No | Enclose | No |
| | OR | | | | | | | |
| | PR | | | | | | | |
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| | TR | | | | | | | |
| | UR | | | | | | | |
| | VR | | | | | | | |
| | WR | | | | | | | |
| | XR | | | | | | | |

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| TL | ZR | S. Owa and N. Nagasaka, "Potential Performance and Feasibility of Immersion Lithography", NGL Workshop 2003, July 10, 2003, Slide Nos. 1-33. | | | |
| | AAR | | | | |
| | BBR | | | | |
| | CCR | | | | |
| | DDR | | | | |

Examiner: *[Signature]* Date Considered: 12/2005

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

| | | | | |
|--|--|--|------------------|----------------------------------|
| FORM PTO-1449 (modified) To: U.S. Department of Commerce (PW FORM PAT-1449) Patent and Trademark Office | | Atty. Dkt. No. | M# 306525 | Client Ref. P-1586.010-US |
| INFORMATION DISCLOSURE STATEMENT BY APPLICANT | | Applicant: Joeri LOF <i>et al.</i> | | |
| | | Appln. No.: Unknown 10/705,816 | | |
| | | Filing Date: November 12, 2003 | | |
| | | Examiner: Unknown <i>any L</i> Group Art Unit: Unknown <i>3071</i> | | |
| Date: November 12, 2003 Page <u>1</u> of <u>3</u> | | | | |

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| TL | AR | 3,573,975 | 04/1971 | Dhaka <i>et al.</i> | 117 | 212 |
| TL | BR | 3,648,587 | 03/1972 | Stevens | 95 | 44 |
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| TL | GR | 5,040,020 | 08/1991 | Rauschenbach <i>et al.</i> | 355 | 53 |
| TL | HR | 5,121,256 | 06/1992 | Corte <i>et al.</i> | 359 | 664 |
| TL | IR | 5,610,683 | 03/1997 | Takahashi | 355 | 53 |
| TL | JR | 5,715,039 | 02/1998 | Fukuda <i>et al.</i> | 355 | 53 |
| TL | KR | 5,825,043 | 10/1998 | Suwa | 250 | 548 |
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| | | Document Number | Date MM/YYYY | Country | Inventor Name | English Abstract | | Translation Readily Available | |
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| TL | OR | WO 99/49504 | 09/1999 | PCT | Fukami <i>et al.</i> | X | | X | |
| TL | PR | EP 0023231 | 02/1981 | Europe | Tabarelli <i>et al.</i> | X | | | |
| TL | QR | EP 0418427 | 03/1991 | Europe | Miyake | X | | X | |
| TL | RR | EP 1039511 | 09/2000 | Europe | Murakimi <i>et al.</i> | X | | X | |
| TL | SR | DD 224448 | 07/1985 | German | Hesse <i>et al.</i> | | X | | |
| TL | TR | DD 242880 | 02/1987 | German | Kuch | | X | | |
| TL | UR | FR 2474708 | 07/1981 | France | Letellier | | X | | |
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| TL | WR | JP 62-121417 | 06/1987 | Japan | Nakazawa | X | | | |
| TL | XR | JP 63-157419 | 06/1988 | Japan | Nakasuji | X | | | |

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|----|-----|---|----------|----|---------|----|
| TL | YR | EP Search Report for EP 02257938 dated September 25, 2003 | | | | |
| TL | ZR | M. Switkes <i>et al.</i> , "Immersion Lithography at 157 nm", MIT Lincoln Lab, Orlando 2001-1, December 17, 2001 | | | | |
| TL | AAR | M. Switkes <i>et al.</i> , "Immersion Lithography at 157 nm", J. Vac. Sci. Technol. B., Vol. 19, No. 6, November/December 2001, pp. 2353-2356 | | | | |
| TL | BBR | M. Switkes <i>et al.</i> , "Immersion Lithography: Optics for the 50 nm Node", 157 Anvers-1, September 4, 2002 | | | | |

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|--|--------------------------|
| Examiner: <i>[Signature]</i> | Date Considered: 12/2005 |
| *EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant. | |

FORM PTO-1449 (modified)
To: U.S. Department of Commerce
(PW FORM PAT-1449)
Patent and Trademark Office

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|-------------------|--------|---------------|
| Atty. Dkt. No. | M# | Client Ref. |
| | 306781 | P-0381.010-US |

**INFORMATION DISCLOSURE STATEMENT
BY APPLICANT**

| | |
|--------------|--|
| Applicant: | Joeri LOF <i>et al.</i> |
| Appln. No.: | Unknown 10/705 816 |
| Filing Date: | November 12, 2003 |
| Examiner: | Unknown <i>Tony Lu</i> Group Art Unit: Unknown 2070 |

Date: November 12, 2003 Page 2 of 3

U.S. PATENT DOCUMENTS

| Examiner's Initials* | | Document Number | Date MM/YYYY | Name (Family Name of First Inventor) | Class | Sub Class | Filing Date (if appropriate) |
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| TL | CCR | 6,603,130 | 08/2003 | Bisschops <i>et al.</i> | 250 | 492.1 | |
| TL | DDR | 6,633,365 | 10/2003 | Suenaga | 355 | 53 | |
| TL | EER | 2002/0163629 | 11/2002 | Switkes <i>et al.</i> | 355 | 53 | |
| TL | FFR | 2003/0123040 | 07/2003 | Almogoy | 355 | 69 | |
| TL | GGR | 2003/0174408 | 09/2003 | Rostalski <i>et al.</i> | 359 | 642 | |
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| | IIR | | | | | | |
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| | NNR | | | | | | |
| | OOR | | | | | | |
| | PPR | | | | | | |

FOREIGN PATENT DOCUMENTS

| | | Document Number | Date MM/YYYY | Country | Inventor Name | English Abstract | | Translation Readily Available | |
|----|-----|--------------------|-----------------|---------|-----------------------|---------------------|----|-------------------------------------|----|
| | | | | | | Enclosed | No | Enclose | No |
| TL | QQR | JP 04-305915 | 10/1992 | Japan | Ozeki <i>et al.</i> | X | | | |
| TL | RRR | JP 04-305917 | 10/1992 | Japan | Ozeki <i>et al.</i> | X | | | |
| TL | SSR | JP 06-124873 | 05/1994 | Japan | Takahashi | X | | X | |
| TL | TTR | JP 07-220990 | 08/1995 | Japan | Fukuda <i>et al.</i> | X | | | |
| TL | UUR | JP 10-228661 | 08/1998 | Japan | Kurokawa | X | | | |
| TL | VVR | JP 10-255319 | 09/1998 | Japan | Suenaga <i>et al.</i> | X | | | |
| TL | WWR | JP 10-303114 | 11/1998 | Japan | Suwa | X | | X | |
| TL | XXR | JP 10-340846 | 12/1998 | Japan | Kudo | X | | X | |
| TL | YYR | JP 2001-091849 | 04/2001 | Japan | Aizaki <i>et al.</i> | X | | | |
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| TL | BBBR | B.J. Lin, "Proximity Printing Through Liquid", IBM Technical Disclosure Bulletin, Vol. 20, No. 11B, April 1978, p. 4997 | | | |

Examiner *[Signature]* Date Considered: 12/2005

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449 (modified)
To: U.S. Department of Commerce
(PW FORM PAT-1449)
Patent and Trademark Office

Atty.
Dkt. No.

M#

Client Ref.

306781

P-0381.010-US

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Applicant: Joeri LOF *et al.*

Appln. No.: ~~Unknown~~ 10/705,816

Filing Date: November 12, 2003

Examiner: ~~Unknown~~ *by L* Group Art Unit: ~~Unknown~~ *2020*

Date: November 12, 2003

Page

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of

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U.S. PATENT DOCUMENTS

| Examiner's Initials* | Document Number | Date MM/YYYY | Name (Family Name of First Inventor) | Class | Sub Class | Filing Date (if appropriate) |
|-------------------------|--------------------|-----------------|---|-------|--------------|------------------------------------|
| | CCC | | | | | |
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FOREIGN PATENT DOCUMENTS

| OVERVIEW FROM DOCUMENT | | | | | | | Abstract | | Readily Available | |
|------------------------|------|-----------------|--------------|---------|---------------|--|----------|----|-------------------|----|
| | | Document Number | Date MM/YYYY | Country | Inventor Name | | Enclosed | No | Enclose | No |
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| TL | NNN | J.A. Hoffnagle et al., "Liquid Immersion Deep-Ultraviolet Interferometric Lithography", J. Vac. Sci. Technol. B., Vol. 17, No. 6, November/December 1999, pp. 3306-3309 | | | |
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Examiner

Date Considered: 12/2005

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

JP

Docket Number: 081468-0306525
Client Reference: P-1586.010-US

PATENT APPLICATION



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of

LOF et al.

Group Art Unit: 2882

Application No.: 10/705,816

Examiner: Unassigned

Filed: November 12, 2003

Confirmation No.: 5408

For: LITHOGRAPHIC APPARATUS AND DEVICE MANUFACTURING METHOD

January 7, 2005

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

Pursuant to 37 C.F.R. 1.56, the attention of the Patent and Trademark Office is hereby directed to the following U.S. patent application(s):

| Examiner's Initials | First Inventor | Application No. | Filing Date | Enclosed |
|---------------------|--|-----------------|-------------|---|
| <i>TL</i> | SUWA et al. (Reissue Application of U.S. Patent No. 6,191,429 B1) | 10/367,910 | 02/19/2003 | <input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input type="checkbox"/> Other: stamped receipt card |
| <i>TL</i> | HOOGEN DAM et al. (081468-0308674) | 10/831,370 | 04/26/2004 | <input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card |

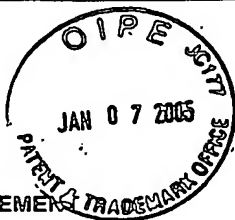
*The Examiner's initials adjacent a citation indicates he/she has considered the cited application relative to the subject application.

It is respectfully requested that these applications and the art cited therein during examination be expressly considered during the prosecution of this application and be made of record in this application. The identification of the above U.S. patent applications is not to be construed as a waiver of secrecy as to those applications now or upon issuance of the present application as a patent.

PLEASE DO NOT PRINT the above information on the patent which results from this application.

Consideration of each listed application is earnestly solicited since unpublished patent applications are contemplated as IDS material; see the exception in Rule 98(a)(2)(iii) and note the penultimate sentence of MPEP 609.

FORM PTÖ-1449 (modified)
To: U.S. Department of Commerce
(PW FORM PAT-1449)
Patent and Trademark Office



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|-------------------|--------|---------------|
| Atty. Dkt. No. | M# | Client Ref. |
| | 306525 | P-1586.010-US |

**INFORMATION DISCLOSURE STATEMENT
BY APPLICANT**

Applicant: LOF et al.
Appln. No. 10/705,816
Filing Date: November 12, 2003
Examiner: Unknown *2014/1* Group Art Unit: ~~2002~~ *2070*

Date: January 7, 2005

Page 1 of 2

U.S. PATENT DOCUMENTS

| Examiner's Initials* | Document Number | Date MM/YYYY | Name (Family Name of First Inventor) | Class | Sub Class | Filing Date (if appropriate) |
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| TL | LR 2004/0125351 | 07/2004 | KRAUTSCHIK et al. | 355 | 53 | |

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| | Document Number | Date MM/YYYY | Country | Inventor Name | English Abstract | | Translation Readily Available | |
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| TL | MR JP 04-305915 | 10/1992 | JAPAN | OZEKI et al. | X | | | |
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| TL | OR JP 06-124873 | 05/1994 | JAPAN | TAKAHASHI | X | | X | |
| TL | PR JP 07-220990 | 08/1995 | JAPAN | FUKUDA et al. | | | | |
| TL | QR JP 10-228661 | 08/1998 | JAPAN | KUROKAWA | X | | | |
| TL | RR JP 10-255319 | 09/1998 | JAPAN | SUENAGA et al. | X | | | |
| TL | SR JP 10-303114 | 11/1998 | JAPAN | SUWA | X | | X | |
| TL | TR JP 10-340846 | 12/1998 | JAPAN | KUDO | X | | X | |
| TL | UR JP 2001-091849 | 04/2001 | JAPAN | AIZAKI et al. | X | | | |
| TL | VR JP 07-132262 | 05/1995 | JAPAN | HIRAKAWA et al. | X | | | |

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

| | | | | | |
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| TL | WR | B.J. LIN, "Drivers, Prospects and Challenges for Immersion Lithography", TSMC, Inc., September 2002 | | | |
| TL | XR | B.J. LIN, "Proximity Printing Through Liquid", IBM Technical Disclosure Bulletin, Vol.20, No. 11B, April 1978, p. 4997 | | | |
| TL | YR | S. OWA et al., "Update on 193nm immersion exposure tool", Litho Forum, International SEMATECH, Los Angeles, January 27-29, 2004, Slide Nos. 1-51 | | | |
| TL | ZR | H. HATA, "The Development of Immersion Exposure Tools", Litho Forum, International SEMATECH, Los Angeles, January 27-29, 2004, Slide Nos. 1-22 | | | |
| TL | AAR | T. MATSUYAMA et al., "Nikon Projection Lens Update", SPIE Microlithography 2004, 5377-65, March, 2004 | | | |
| | BBR | | | | |

Examiner *[Signature]* Date Considered: *12/2005*
*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

| | | | | | | | | | |
|--|-----|---|-----------------|---|--|------------------|---------------------------------|-------------------------------------|----|
| FORM PTO-1449 (modified) To: U.S. Department of Commerce (PW FORM PAT-1449) Patent and Trademark Office | | | | | Atty. Dkt. No. | M# | Client Ref. | | |
| | | | | | 306525 | | P-1586.010-US | | |
| INFORMATION DISCLOSURE STATEMENT BY APPLICANT | | | | | Applicant: LOF et al. | | | | |
| | | | | | Appln. No. 10/705,816 | | | | |
| | | | | | Filing Date: November 12, 2003 | | | | |
| | | | | | Examiner: Unknown <u>Don Ly</u> Group Art Unit: 2882 <u>2878</u> | | | | |
| Date: January 7, 2005 Page <u>2</u> of <u>2</u> | | | | | | | | | |
| U.S. PATENT DOCUMENTS | | | | | | | | | |
| Examiner's Initials* | | Document Number | Date MM/YYYY | Name (Family Name of First Inventor) | Class | Sub Class | Filing Date (if appropriate) | | |
| | AR | | | | | | | | |
| | BR | | | | | | | | |
| FOREIGN PATENT DOCUMENTS | | | | | | English Abstract | | Translation Readily Available | |
| | | Document Number | Date MM/YYYY | Country | Inventor Name | Enclosed | No | Enclosed | No |
| TL | CR | JP 58-202448 | 11/1983 | JAPAN | KAWAMURA et al. | X | | | |
| TL | DR | WO 2004/019128 | 03/2004 | PCT | OMURA et al. | X | | X | |
| TL | ER | WO 03/077037 | 09/2003 | PCT | ROSTALSKI et al. | X | | X | |
| TL | FR | WO 03/077036 | 09/2003 | PCT | SCHUSTER | X | | | |
| TL | GR | DD 206 607 | 02/1984 | GERMANY | WESTPHAL et al. | | | X | |
| TL | HR | DD 221 563 | 04/1985 | GERMANY | PFORR et al. | | | X | |
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| Examiner <u>[Signature]</u> | | | | | Date Considered: <u>12/2005</u> | | | | |
| *EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant. | | | | | | | | | |